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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

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jarmstrong@oliff.com

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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 10/564,943
Filing Date: May 09, 2006
Appellant(s): IIZUKA ET AL.

James A. Oliff
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 8/13/2010 appealing from the Office action mailed 3/25/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 1-9 stand rejected under 35 U.S.C. 103 (a).

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| 5,813,576 | Iizuka et al. | 9-1998 |
| 4,925,106 | Maas et al. | 5-1990 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,813,576 to Iizuka et al. (Iizuka) in view of U.S. Patent No. 4,925,106 to Maas et al. (Maas).

Iizuka shows a foamer dispenser (Fig. 50) comprising: a base cap (150) fixedly held at a container mouth; two pumps (10 and 20) attached to the base cap and configured to separately suck, pressurize, and pressure-feed ambient air and the liquid contents filled in the container (Col. 22, ll. 23-67, Col. 23, ll. 57-67 and Col. 24, ll. 1-26); a depression head (100) for defining a merging space (46) for merging outlet passages of the pumps with each other, the depression head having an ejecting end (107) communicated with the outside, and the depression head having an internal passage (108b) for communicating the merging space with the ejecting end, so as to eject contents mixed with the ambient air from the ejecting end by repeating depressing and

returning operations of the depression head (Col. 23, ll. 3-14); and a foaming element (131, 132, 133) disposed within the internal passage of the depression head (Fig. 50) and configured to foam the contents mixed with the ambient air (Col. 50, ll. 12-18). The foaming element comprises: a jet ring (131) having an inlet opening (134) with an opening area narrower than that of the internal passage of the depression head (Fig. 50), the jet ring comprising a tubular body (Col. 18, ll. 63-66) with an opening area larger than that of the inlet opening and communicated with the internal passage of the depression head (Fig. 50); and a plurality of meshes (133, Col. 29, ll. 56-67 and Col. 29, ll. 1-13) disposed within the tubular body of the jet ring so as to face to the inlet opening of said jet ring (Fig. 51). The meshes have a number of fine holes to be contacted with the contents mixed with the ambient air and supplied from the inlet opening to allow a part of the contents to pass through the mesh (Col. 19, ll. 12-20). The meshes are each coupled to a separate mesh ring (132, Col. 29, ll. 56-67 and Col. 29, ll. 1-13). The mesh further has an opening diameter larger than that of the inlet opening of said jet ring (Fig. 51).

Iizuka fails to specifically disclose that the mesh has an opening diameter Φ2 which is 2.0 to 3.5 times or 2.2 to 3.2 times as large as an opening diameter Φ1 at the inlet opening of said jet ring. In order to construct the device taught by Iizuka, one of ordinary skill would be required to select a ratio between the opening diameter of the meshes and the inlet opening of the jet ring and Iizuka shows that the opening diameter of the meshes is significantly larger than an opening diameter at the inlet opening of said jet ring. It would have been obvious to one of ordinary skill to have selected the

ratio that resulted in the desired foam characteristics. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have manufactured the foamer dispenser of Iizuka with the specified ratio of the diameter of the mesh opening to diameter of the inlet opening to produce a foam with the desired characteristics. Furthermore, it has been held where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (See MPEP 2144.05).

Iizuka discloses that the mesh is adjustable between a plurality of positions to achieve optimum bubble size (Col. 52, ll. 66-67, Col. 53, ll. 1-19) but is silent with respect to how the mesh is attached to the jet ring and therefore fails to disclose at least two pairs of ribs being formed at least at two positions inside the jet ring to allow for a plurality of positions for fixing the mesh

Maas shows a foamer dispenser (Fig. 1) comprising a container (16), pump (10), and foaming nozzle (Fig. 12) with a mesh (160) secured in the nozzle body by a pair of ribs (171, 172) to facilitate an interference fit (Col. 8, ll. 57-62). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the jet ring and mesh of Iizuka with ribs as taught by Maas to facilitate an interference fit. It would have further been obvious to provide at least two pairs of ribs to correspond to the plurality of mesh positions taught by Iizuka.

Regarding claim 3, Iizuka shows that the jet ring has a tapered surface (131b) or curved surface connecting between said inlet opening and said plurality of meshes.

Regarding claim 4, Iizuka shows that the pumps consist of a dual pump comprising: a cylinder (22) suspended from a lower surface of said base cap (150), and configured to cooperate with an inner periphery of the mouth of the container to define an annular gap (27) there between which is communicated with an interior of the mouth and sealed by said base cap (Fig. 50); and two pistons (50 and 60) arranged in series with each other within said cylinder so as to be slidable therein (Figs. 50 and 51); and wherein said pistons are configured to separately suck, pressurize, and pressure-feed the contents within the container and the ambient air (Col. 22, ll. 23-67, Col. 23, ll. 57-67 and Col. 24, ll. 1-26).

Regarding claim 5, Iizuka shows that the dual pump is formed with an ambient air introduction port (64) at a cylinder portion (22) constituting the pump for sucking, pressurizing, and pressure-feeding the ambient air, the ambient air introduction port being blocked by said piston (Col. 21, ll. 7-22) for sucking, pressurizing, and pressure-feeding the ambient air when said piston is in a stationary state (Fig. 49) where said piston is kept unslid, and the ambient air introduction port being released from said piston when said piston is depressed, to thereby introduce ambient air into the container (Fig. 51).

Regarding claims 6 and 7, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided ribs at the side of the depression head and at the side of the inlet opening of Iizuka as modified by Maas to correspond to the mesh positions shown in Figures 52 and 53 of Iizuka.

Regarding claim 9, Iizuka discloses that the mesh of the jet ring is circular in transverse cross sectional shape (Col. 19, ll. 12-14) and the inlet opening of the jet ring is circular in transverse cross sectional shape (Col. 18, ll. 63-67 and Col. 19, ll. 1-11).

**(10) Response to Argument**

The appellant argues in the fourth paragraph of page 9 of the appeal brief and the third paragraph of page 10 of the appeal brief that the claimed range of ratios between the mesh opening diameter and jet ring inlet opening is not an obvious optimization of ranges since the prior art has not shown that the ratio is a recognized result-effective variable. This argument is not found persuasive. To the contrary, by appellant's admission, the argued ratios are an art recognized results effective variable. Specifically, the appellant discloses in paragraphs 0002 and 0003 in the Background Art section of the original specification, that in widely used prior art foamer dispensers, a liquid-air mixture is passed through a foaming element to create a foamy mixture. The foaming element is in the form of a jet ring having a narrow inlet opening, a tubular body with an opening area larger than that of the inlet opening and a mesh disposed within the tubular body that is configured to contact with the contents mixed with ambient air and supplied from the inlet opening, thereby allowing a part of the contents to pass through the mesh to enable creation of a foam having a fineness suitable for the usage. The specification also discloses in paragraph 0003 that a narrow inlet opening increases the ejecting speed of the contents to be mixed. Given a standard mesh and the knowledge that the size of the inlet opening of the jet ring affects the ejecting speed

of the contents, one of ordinary skill would look to optimize the quality of foam by varying the size of the inlet opening (consequently changing the ratio between the opening diameter of the jet ring inlet opening and the diameter of the mesh opening) thereby varying the ejecting speed of the contents. Alternatively, given a standard jet ring and the knowledge that allowing a part of the contents to pass through the mesh enables creation of a foam of suitable fineness, one of ordinary skill would look to optimize the quality of foam by varying the size of the opening of the mesh (consequently changing the ratio between the opening diameter of the jet ring inlet opening and the diameter of the mesh opening) thereby varying how much of the contents are allowed to pass through the mesh.

Furthermore, when manufacturing the Iizuka device or the prior art devices discussed in the appellant's disclosure, one of ordinary skill would be required to select a ratio between the opening diameter of the inlet opening and the opening diameter of the mesh opening with the inlet opening narrower than the mesh opening diameter. It would have been obvious to one of ordinary skill to select the ratio that resulted in the desired foam characteristics.

In the fourth paragraph of page 11 of the appeal brief, the appellant asserts that since the JP 2002-159893A reference discloses that changing the size of the openings in the mesh results in a change in fineness of foam, one of ordinary skill would not look to optimize the ratio of the jet ring opening diameter and the mesh opening diameter. This argument is not persuasive. The existence of one method to achieve a desired

result is not evidence that one of ordinary skill would not look to alternative methods to achieve the same result.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/D. R. S./

Examiner, Art Unit 3754

Conferees:

/KB/

/Kenneth Bomberg/
Primary Examiner, Art Unit 3754

/David Okonsky/
Primary Examiner, Art Unit 3700